



4164-01-P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

21 CFR Part 876

[Docket No. FDA-2012-N-0303]

Gastroenterology-Urology Devices; Reclassification of Implanted Blood Access Devices

AGENCY: Food and Drug Administration, HHS.

ACTION: Final order.

SUMMARY: The Food and Drug Administration (FDA) is issuing a final order to reclassify implanted blood access devices, a preamendments class III device, into class II (special controls) based on new information and subject to premarket notification and to further clarify the identification.

DATES: This order is effective [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER].

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SUPPLEMENTARY INFORMATION:

I. Background--Regulatory Authorities

The Federal Food, Drug, and Cosmetic Act (the FD&C Act), as amended by the Medical Device Amendments of 1976 (the 1976 amendments) (Public Law 94-295), the Safe Medical Devices Act of 1990 (Public Law 101-629), the Food and Drug Administration Modernization Act of 1997 (FDAMA) (Public Law 105-115), the Medical Device User Fee and Modernization

Act of 2002 (Public Law 107-250), the Medical Devices Technical Corrections Act (Public Law 108-214), the Food and Drug Administration Amendments Act of 2007 (Public Law 110-85), and the Food and Drug Administration Safety and Innovation Act (FDASIA) (Public Law 112-144), establishes a comprehensive system for the regulation of medical devices intended for human use. Section 513 of the FD&C Act (21 U.S.C. 360c) established three categories (classes) of devices, reflecting the regulatory controls needed to provide reasonable assurance of their safety and effectiveness. The three categories of devices are class I (general controls), class II (special controls), and class III (premarket approval).

Under section 513(d) of the FD&C Act, devices that were in commercial distribution before the enactment of the 1976 amendments, May 28, 1976 (generally referred to as preamendments devices), are classified after FDA has: (1) Received a recommendation from a device classification panel (an FDA advisory committee); (2) published the Panel's recommendation for comment, along with a proposed regulation classifying the device; and (3) published a final regulation classifying the device. FDA has classified most preamendments devices under these procedures.

Devices that were not in commercial distribution prior to May 28, 1976 (generally referred to as postamendments devices), are automatically classified by section 513(f) of the FD&C Act into class III without any FDA rulemaking process. Those devices remain in class III and require premarket approval unless, and until, the device is reclassified into class I or II or FDA issues an order finding the device to be substantially equivalent, in accordance with section 513(i) of the FD&C Act, to a predicate device that does not require premarket approval. The Agency determines whether new devices are substantially equivalent to predicate devices by

means of premarket notification procedures in section 510(k) of the FD&C Act (21 U.S.C. 360(k)) and part 807 (21 CFR part 807).

On July 9, 2012, FDASIA was enacted. Section 608(a) of FDASIA amended section 513(e) of the FD&C Act, changing the mechanism for reclassifying a device from rulemaking to an administrative order.

Section 513(e) of the FD&C Act governs reclassification of classified preamendments devices. This section provides that FDA may, by administrative order, reclassify a device based upon “new information.” FDA can initiate a reclassification under section 513(e) or an interested person may petition FDA to reclassify a preamendments device. The term “new information,” as used in section 513(e) of the FD&C Act, includes information developed as a result of a reevaluation of the data before the Agency when the device was originally classified, as well as information not presented, not available, or not developed at that time. (See, e.g., Holland-Rantos Co. v. United States Department of Health, Education, and Welfare, 587 F.2d 1173, 1174 n.1 (D.C. Cir. 1978); Upjohn v. Finch, 422 F.2d 944 (6th Cir. 1970); Bell v. Goddard, 366 F.2d 177 (7th Cir. 1966).)

Reevaluation of the data previously before the Agency is an appropriate basis for subsequent action where the reevaluation is made in light of newly available authority (see Bell, 366 F.2d at 181; Ethicon, Inc. v. FDA, 762 F.Supp. 382, 388-391 (D.D.C. 1991)), or in light of changes in “medical science” (Upjohn, 422 F.2d at 951). Whether data before the Agency are old or new data, the “new information” to support reclassification under section 513(e) must be “valid scientific evidence,” as defined in section 513(a)(3) of the FD&C Act and 21 CFR 860.7(c)(2). (See, e.g., General Medical Co. v. FDA, 770 F.2d 214 (D.C. Cir. 1985); Contact

Lens Manufacturers Association v. FDA, 766 F.2d 592 (D.C. Cir. 1985), cert. denied, 474 U.S. 1062 (1986).)

FDA relies upon “valid scientific evidence” in the classification process to determine the level of regulation for devices. To be considered in the reclassification process, the “valid scientific evidence” upon which the Agency relies must be publicly available. Publicly available information excludes trade secret and/or confidential commercial information, e.g., the contents of a pending premarket approval application (PMA). (See section 520(c) of the FD&C Act (21 U.S.C. 360j(c)).) Section 520(h)(4) of the FD&C Act, added by FDAMA, provides that FDA may use, for reclassification of a device, certain information in a PMA 6 years after the application has been approved. This includes information from clinical and preclinical tests or studies that demonstrate the safety or effectiveness of the device but does not include descriptions of methods of manufacture or product composition and other trade secrets.

Section 513(e)(1) of the FD&C Act sets forth the process for issuing a final order. Specifically, prior to the issuance of a final order reclassifying a device, the following must occur: (1) Publication of a proposed order in the Federal Register; (2) a meeting of a device classification panel described in section 513(b) of the FD&C Act; and (3) consideration of comments to a public docket. FDA published a proposed order to reclassify this device in the Federal Register of June 28, 2013 (78 FR 38867). FDA received and has considered one comment on this proposed order, as discussed in section II. FDA has held a meeting of a device classification panel described in section 513(b) of the FD&C Act with respect to implanted blood access devices, and therefore, has met this requirement under section 513(e)(1) of the FD&C Act. As explained further in section III, a meeting of a device classification panel described in section 513(b) of the FD&C Act, the Gastroenterology and Urology Devices Panel of the

Medical Devices Advisory Committee (the Panel), took place on June 27, 2013 (78 FR 25747, May 2, 2013), to discuss whether implanted blood access devices should be reclassified or remain in class III. The reclassification of implanted blood access devices was mostly supported by the Panel. During deliberations, the Panel recommended that implanted hemodialysis catheters and implanted coated hemodialysis catheters be reclassified into class II because there was sufficient information to establish special controls, with the provision of slight modifications to the risks to health, as well as the proposed special controls. The majority of the Panel members expressed concern that the risks associated with the fully subcutaneous implanted blood access devices (port-catheter systems or fully subcutaneous port-catheter systems) or the arteriovenous (A-V) shunt cannulae might not be mitigated by the proposed special controls and recommended that these two implanted blood access device subtypes remain in class III. Details of the Panel's recommendations and FDA's response are provided in section III.

FDA is not aware of new information since the Panel meeting that would provide a basis for a different recommendation or findings.

II. Public Comments in Response to the Proposed Order

In response to the June 28, 2013, proposed order to reclassify implanted blood access devices, FDA did not receive any comments. However, in response to the draft guidance that published the same day (78 FR 38994, June 28, 2013) FDA received one comment. The comment included suggestions for revision to the proposed special controls, and is therefore relevant to the proposed order. In general, the comment supported FDA's intent to reclassify implanted blood access devices including the implementation of special controls. Regarding the special controls, the commenter recommended that the special control relating to mechanical hemolysis be modified to specify that it only applies to devices that include a new or altered

blood flow pattern. They also recommended that chemical tolerance testing only be necessary for the disinfection agents listed within the product labeling, and not to all “commonly used disinfection agents,” and that the compatible agents must be listed in the labeling, as opposed to a listing of the disinfecting agents that cannot be used. Finally, in relation to disinfecting agents, the commenter suggested that the term “contraindicated” be avoided and suggested alternative language regarding providing appropriate information to users regarding incompatible disinfecting agents. It was also recommended that the special control relating to sterility be modified to specify that not only the package remain sterile, but also its contents.

FDA continues to believe that the proposed special controls (section VIII of the proposed order), with minor modifications as discussed in section III, provide a reasonable assurance of safety and effectiveness. Although the Panel did not comment specifically on any of the revisions recommended by the commenter, FDA considered the suggestions and adopted the recommendations regarding mechanical hemolysis testing, as reflected in the revised special control.

Regarding the comments relating to the testing and labeling of compatible cleaning and disinfecting agents, FDA agrees that an alternative to printing contraindicated disinfecting agents directly on the catheter would be to provide the information on both the patient’s medical record and directly to the patient via an implant card. The associated special control has been modified from that proposed only to specifically state that a patient implant card must be provided, which was not previously stated. FDA disagrees, however, with the other comments regarding disinfecting agents, and believes that in order to reasonably assure the safety and effectiveness of implanted blood access devices, due to the variation in facility protocols regarding care and maintenance of this device type, chemical tolerance to or incompatibility with commonly used

disinfection agents must be established. It is insufficient to only conduct chemical tolerance testing for the compatible disinfection agents listed within the product labeling. Therefore, the related special control regarding the requirement to establish the device's chemical tolerance to repeated exposure to commonly used disinfection agents remains unchanged. FDA believes that the requirement that the device remain sterile in addition to the packaging has been adequately captured in the proposed special control, and therefore no associated changes were made.

FDA believes that the special controls provide a reasonable assurance of safety and effectiveness for implanted blood access devices that feature similar technology and indications. The Agency believes it has now identified all relevant risks to health (see section V of the proposed order for the originally identified risks to health and section III of this document for updated risks to health based on Panel recommendations) and that the mitigation methods described in the associated special controls will be effective in mitigating these risks. These risks and mitigations were based on recommendations from the June 27, 2013, Gastroenterology and Urology Devices Panel of the Medical Devices Advisory Committee (Ref. 1) as further described in section III; the information gathered from the Manufacturer and User Facility Device Experience database and FDA's literature review (see FDA's Executive Panel Summary, Ref. 2); and information provided in response to the proposed order.

III. Deliberations of the Panel

In Session II of the June 27, 2013, device classification panel meeting, the Panel considered the reclassification of implanted blood access devices (Ref. 1) from class III to class II (special controls). The Panel was asked to provide input on the risks to health, safety, and effectiveness of these devices.

The reclassification of implanted blood access devices was partially supported by the Panel. During deliberations, the Panel concluded that it would be acceptable to reclassify the implanted hemodialysis catheters and the implanted coated hemodialysis catheters into class II with slight modifications to the risks to health as well as the proposed special controls, as discussed further in this document. However, the Panel expressed concern that the proposed special controls may not be adequate to mitigate the risks associated with the fully subcutaneous port-catheter systems or the A-V shunt cannulae and, as a result of this concern over the ability to establish adequate special controls, recommended that these two implanted blood access device subtypes remain in class III. The concern for the fully subcutaneous port-catheter devices was based on a higher risk of infectious complications historically noted for these devices compared with other types of implanted blood access devices for hemodialysis. Because the A-V shunt cannulae access the arterial circulation, the Panel expressed concerns that the risks of arterial thrombosis, premature separation, severe bleeding, air embolism, and steal syndrome might not be mitigated by the proposed special controls.

FDA does not agree with the Panel that these two device subtypes should remain in class III. To address the concerns expressed by the Panel, FDA has modified the special controls by including additional special controls that will require the submission of clinical performance data for these two device subtypes. Of note, arteriovenous grafts (vascular graft prostheses), another type of implanted vascular access for hemodialysis, are similar to A-V shunt cannulae in that they also access the arterial circulation. These devices are currently regulated as class II medical devices (21 CFR 870.3450). A-V shunt cannulae are unique in that they have an external component, but FDA believes the overall categories of risk are similar. Fully subcutaneous port-catheter systems indicated for infusion, which have similar design features and a similar risk

profile to the fully subcutaneous port-catheter systems indicated for hemodialysis, are currently also regulated as class II medical devices (21 CFR 880.5965). Based on reported adverse events and device recalls, and on the lack of increased infection being noted in current practice guidelines for these devices, FDA believes that arteriovenous grafts and fully subcutaneous port-catheter systems indicated for infusion are adequately regulated as class II devices. Given that devices with similar risk profiles, indications, and technologies are currently regulated as class II medical devices, FDA believes that special controls can be established for fully subcutaneous port-catheter devices and A-V shunt cannulae to mitigate the identified risks to health and provide a reasonable assurance of safety and effectiveness.

FDA presented the risks to health to the Panel, and the Panel fully supported the risks as originally identified, and provided the following additional comments. Several Panel members felt that the risks of arterial thrombosis (in addition to venous thrombosis), premature separation and bleeding, potential for exsanguination, air embolism, and steal syndrome should be included for A-V shunt cannulae. With the exception of steal syndrome, FDA believes that these risks were already included, but appreciates the Panel input with regard to the increased risks of thrombosis, bleeding, and air embolism when the devices are inserted into the arterial circulation. Clarifying comments have been added to the previously identified risks, and a new risk was added for vascular access steal syndrome. The Panel also felt that the risk of “Infection and pyrogen reactions” should be expanded to state that improper insertion, care, or maintenance of the device can also lead to infection. As a result, FDA has added clarifying statements to this previously identified risk to health. Similarly, the Panel members felt that the risk of anaphylaxis should be included as a risk for coated devices. FDA does not believe that this is a newly identified risk and has now included clarifying statements to include this risk subtype

under the category of “Adverse tissue reaction” as well as additional language regarding the risks specific to coated devices. Clarifying statements have also been added to the category of “Device Failure” specifically relating the risk to coated devices in addition to non-coated devices.

Based upon the Panel’s input as described and FDA’s review, FDA has updated the risks to the following:

- Thrombosis in patient, device occlusion, or central venous stenosis: Inadequate blood compatibility of the materials used in this device, blood pooling between dialysis sessions, or turbulent blood pathways could lead to potentially debilitating or fatal thromboembolism. If the device accesses the arterial circulation, the device could cause arterial stenosis or thrombosis.
- Adverse tissue reaction: Inadequate tissue compatibility of the materials used in this device, including coatings or additives, could cause an immune reaction. This could include anaphylaxis for coated devices.
- Infection and pyrogen reactions: Skin or bloodstream infections could result from an improperly sterilized device, inappropriate preparation of the insertion site, or improper care and maintenance of the device exit site.
- Device failure: Weakness of connections or materials (including coatings or additives) could lead to breakage, which could result in blood loss or device fragment embolization.
- Cardiac arrhythmia, hemorrhage, embolism, nerve injury, or vessel perforation: Improper placement into the heart or blood vessel could damage tissues and result in injuries, such as vessel perforation. Inappropriate placement or removal of the device could cause air embolism or hemorrhage.

- Hemolysis: Turbulence or high pressure created by narrow openings or changes in blood flow paths could cause the destruction of red blood cells.
- Accidental withdrawal or device migration: The cuff of implanted devices may not allow adequate ingrowth from the surrounding subcutaneous tissue, which could cause the device to dislodge or fall out with subsequent blood loss. If the device accesses the arterial circulation, inadvertent separation could result in severe hemorrhage including exsanguination.
- Vascular access steal syndrome associated with devices inserted into the artery and vein:

Alterations in blood flow paths could result if the device accesses both the arterial and venous circulation, which could result in decreased blood flow to the distal extremity.

The Panel agreed that general controls were not sufficient to provide a reasonable assurance of safety and effectiveness, and also that these devices are life-supporting or life-sustaining. The Panel mostly agreed that FDA's list of special controls from the June 28, 2013, proposed order would mitigate the identified risks and provide reasonable assurance of safety and effectiveness for the implanted hemodialysis catheters and the implanted coated hemodialysis catheters. Some of the panelists expressed concerns regarding the specificity of some of the proposed special controls and suggested modifications. As described further in this document, FDA largely agreed with the special control recommendations and has revised the special controls accordingly (see section IV. The Final Order). The special controls were also modified in response to the modifications to the risks to health previously described.

The Panel recommended updating the special control for labeling to include proper care and maintenance of the device and device exit-site and to specify appropriate qualifications for clinical providers performing the insertion, maintenance, and removal of the devices. FDA

agreed with this recommendation. In response to the Panel's recommended modifications to the risks to health, a special control for labeling was also added for coated devices to include a Warning Statement for potential allergic reactions including anaphylaxis if the coating or additive contains known allergens. FDA also added labeling special controls for A-V shunt cannulae to include Warning Statements for vascular access steal syndrome, arterial stenosis, arterial thrombosis, and hemorrhage including exsanguination given that the device accesses the arterial circulation.

FDA added new special controls requiring clinical performance data for the fully subcutaneous port-catheter devices and the A-V shunt cannulae in order to address the Panel concerns for a higher risk of infectious complications historically noted for the fully subcutaneous devices and the risks of arterial thrombosis, premature separation, severe bleeding, air embolism, and steal syndrome for the A-V shunt cannulae. FDA believes that clinical performance data could adequately characterize adverse events observed during clinical use in the intended population in order to inform FDA and therefore provide a reasonable assurance of safety and effectiveness.

Table 1 shows how FDA believes that the risks to health identified and listed in this document can be mitigated by the special controls.

Table 1.--Health Risks and Mitigation Measures for Implanted Blood Access Devices

Identified Risk	Mitigation Measures
Thrombosis in patient and catheter	Performance testing Labeling Sterility Clinical performance testing (devices inserted into artery, e.g., A-V shunt cannulae)
Adverse tissue reaction	Biocompatibility Sterility Expiration date testing Labeling (with inclusion of Warning Statement for anaphylaxis for devices with coatings or additives)

Identified Risk	Mitigation Measures
	Materials characterization (devices with coatings or additives)
Infection and pyrogen reactions	Performance testing Clinical performance testing (fully subcutaneous port-catheter devices) Sterility Expiration date testing Labeling
Device failure	Performance testing Expiration date testing Labeling
Cardiac arrhythmia, hemorrhage, embolism, nerve injury, or vessel perforation	Performance testing Labeling Clinical performance testing (devices inserted into artery, e.g., A-V shunt cannulae)
Hemolysis	Performance testing Labeling
Accidental withdrawal or device migration	Biocompatibility Performance testing Clinical performance testing (devices inserted into artery, e.g., A-V shunt cannulae) Labeling
Vascular access steal syndrome associated with devices inserted into the artery and vein	Labeling Clinical performance testing (devices inserted into artery, e.g., A-V shunt cannulae)

IV. The Final Order

Under section 513(e) of the FD&C Act, FDA is adopting its findings, as published in the preamble to the June 28, 2013, proposed order. FDA has made revisions in this final order in response to the comments received (see section II) and the deliberations of the Panel (see section III). As published in the proposed order, FDA is issuing this final order to reclassify implanted blood access devices from class III to class II and establish special controls by revising § 876.5540 (21 CFR 876.5540). The identification for § 876.5540(a)(1) has been revised to provide a more accurate description of devices in this classification regulation.

In response to the input of the Panel, FDA also made refinements to the proposed special controls as described previously. FDA added new special controls requiring clinical performance data for the fully subcutaneous port-catheter devices and the A-V shunt cannulae. Additionally, FDA updated the special controls for labeling and updated special controls for implanted blood access devices with coatings.

Following the effective date of this final order, firms submitting a premarket notification (510(k)) for an implanted blood access device will need either to (1) comply with the particular mitigation measures set forth in the codified special controls or (2) use alternative mitigation measures, but demonstrate to the Agency's satisfaction that those alternative measures identified by the firm will provide at least an equivalent assurance of safety and effectiveness.

Section 510(m) of the FD&C Act provides that FDA may exempt a class II device from the premarket notification requirements under section 510(k) of the FD&C Act if FDA determines that premarket notification is not necessary to provide reasonable assurance of the safety and effectiveness of the devices. FDA has determined that premarket notification is necessary to provide reasonable assurance of safety and effectiveness of implanted blood access devices, and therefore, this device type is not exempt from premarket notification requirements.

V. Environmental Impact

The Agency has determined under 21 CFR 25.34(b) that this action is of a type that does not individually or cumulatively have a significant effect on the human environment. Therefore, neither an environmental assessment nor an environmental impact statement is required.

VI. Paperwork Reduction Act of 1995

This final order refers to previously approved collections of information found in FDA regulations. These collections of information are subject to review by the Office of Management

and Budget (OMB) under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501-3520). The collections of information in 21 CFR part 812 have been approved under OMB control number 0910-0078; the collections of information in 21 CFR part 807, subpart E, have been approved under OMB control number 0910-0120; and the collections of information under 21 CFR part 801 have been approved under OMB control number 0910-0485.

VII. Codification of Orders

Prior to the amendments by FDASIA, section 513(e) of the FD&C Act provided for FDA to issue regulations to reclassify devices. Although section 513(e) as amended requires FDA to issue final orders rather than regulations, FDASIA also provides for FDA to revoke previously issued regulations by order. FDA will continue to codify classifications and reclassifications in the Code of Federal Regulations. Changes resulting from final orders will appear in the CFR as changes to codified classification determinations or as newly codified orders. Therefore, under section 513(e)(1)(A)(i), as amended by FDASIA, in this final order, we are revoking the requirements in § 876.5540(b)(1) related to the classification of implanted blood access devices as class III devices and codifying the reclassification of implanted blood access devices into class II (special controls).

VIII. References

The following references have been placed on display in the Division of Dockets Management (HFA-305), Food and Drug Administration, 5630 Fishers Lane, rm. 1061, Rockville, MD 20852, and may be seen by interested persons between 9 a.m. and 4 p.m., Monday through Friday, and are available electronically at <http://www.regulations.gov>. (FDA has verified all the Web site addresses in this reference section, but we are not responsible for any subsequent changes to the Web sites after this document publishes in the Federal Register.)

1. Transcript of the June 27, 2013, meeting of the Gastroenterology and Urology Devices Panel (available at:

<http://www.fda.gov/downloads/AdvisoryCommittees/CommitteesMeetingMaterials/MedicalDevices/MedicalDevicesAdvisoryCommittee/Gastroenterology-UrologyDevicesPanel/UCM362271.pdf>).

2. FDA Executive Summary prepared for the June 27, 2013, meeting of the Gastroenterology and Urology Devices Panel (available at:

<http://www.fda.gov/downloads/AdvisoryCommittees/CommitteesMeetingMaterials/MedicalDevices/MedicalDevicesAdvisoryCommittee/Gastroenterology-UrologyDevicesPanel/UCM358369.pdf>).

List of Subjects in 21 CFR Part 876

Medical devices.

Therefore, under the Federal Food, Drug, and Cosmetic Act and under authority delegated to the Commissioner of Food and Drugs, 21 CFR part 876 is amended as follows:

PART 876--GASTROENTEROLOGY-UROLOGY DEVICES

1. The authority citation for 21 CFR part 876 continues to read as follows:

Authority: 21 U.S.C. 351, 360, 360c, 360e, 360j, 360l, 371.

2. Amend § 876.5540 by revising paragraphs (a)(1) and (b)(1) and by removing paragraph (c) to read as follows:

§ 876.5540 Blood access device and accessories.

(a) * * *

(1) The implanted blood access device is a prescription device and consists of various flexible or rigid tubes, such as catheters, or cannulae, which are surgically implanted in

appropriate blood vessels, may come through the skin, and are intended to remain in the body for 30 days or more. This generic type of device includes various catheters, shunts, and connectors specifically designed to provide access to blood. Examples include single and double lumen catheters with cuff(s), fully subcutaneous port-catheter systems, and A-V shunt cannulae (with vessel tips). The implanted blood access device may also contain coatings or additives which may provide additional functionality to the device.

* * * * *

(b) Classification. (1) Class II (special controls) for the implanted blood access device.

The special controls for this device are:

(i) Components of the device that come into human contact must be demonstrated to be biocompatible. Material names and specific designation numbers must be provided.

(ii) Performance data must demonstrate that the device performs as intended under anticipated conditions of use. The following performance characteristics must be tested:

(A) Pressure versus flow rates for both arterial and venous lumens, from the minimum flow rate to the maximum flow rate in 100 milliliter per minute increments, must be established.

The fluid and its viscosity used during testing must be stated.

(B) Recirculation rates for both forward and reverse flow configurations must be established, along with the protocol used to perform the assay, which must be provided.

(C) Priming volumes must be established.

(D) Tensile testing of joints and materials must be conducted. The minimum acceptance criteria must be adequate for its intended use.

(E) Air leakage testing and liquid leakage testing must be conducted.

(F) Testing of the repeated clamping of the extensions of the catheter that simulates

use over the life of the device must be conducted, and retested for leakage.

(G) Mechanical hemolysis testing must be conducted for new or altered device designs that affect the blood flow pattern.

(H) Chemical tolerance of the device to repeated exposure to commonly used disinfection agents must be established.

(iii) Performance data must demonstrate the sterility of the device.

(iv) Performance data must support the shelf life of the device for continued sterility, package integrity, and functionality over the requested shelf life that must include tensile, repeated clamping, and leakage testing.

(v) Labeling of implanted blood access devices for hemodialysis must include the following:

(A) Labeling must provide arterial and venous pressure versus flow rates, either in tabular or graphical format. The fluid and its viscosity used during testing must be stated.

(B) Labeling must specify the forward and reverse recirculation rates.

(C) Labeling must provide the arterial and venous priming volumes.

(D) Labeling must specify an expiration date.

(E) Labeling must identify any disinfecting agents that cannot be used to clean any components of the device.

(F) Any contraindicated disinfecting agents due to material incompatibility must be identified by printing a warning on the catheter. Alternatively, contraindicated disinfecting agents must be identified by a label affixed to the patient's medical record and with written instructions provided directly to the patient.

(G) Labeling must include a patient implant card.

(H) The labeling must contain comprehensive instructions for the following:

- (1) Preparation and insertion of the device, including recommended site of insertion, method of insertion, and a reference on the proper location for tip placement;
- (2) Proper care and maintenance of the device and device exit site;
- (3) Removal of the device;
- (4) Anticoagulation;
- (5) Management of obstruction and thrombus formation; and
- (6) Qualifications for clinical providers performing the insertion, maintenance, and removal of the devices.

(vi) In addition to Special Controls in paragraphs (b)(1)(i) through (v) of this section, implanted blood access devices that include subcutaneous ports must include the following:

(A) Labeling must include the recommended type of needle for access as well as detailed instructions for care and maintenance of the port, subcutaneous pocket, and skin overlying the port.

(B) Performance testing must include results on repeated use of the ports that simulates use over the intended life of the device.

(C) Clinical performance testing must demonstrate safe and effective use and capture any adverse events observed during clinical use.

(vii) In addition to Special Controls in paragraphs (b)(1)(i) through (v) of this section, implanted blood access devices with coatings or additives must include the following:

(A) A description and material characterization of the coating or additive material, the purpose of the coating or additive, duration of effectiveness, and how and where the coating is applied.

(B) An identification in the labeling of any coatings or additives and a summary of the results of performance testing for any coating or material with special characteristics, such as decreased thrombus formation or antimicrobial properties.

(C) A Warning Statement in the labeling for potential allergic reactions including anaphylaxis if the coating or additive contains known allergens.

(D) Performance data must demonstrate efficacy of the coating or additive and the duration of effectiveness.

(viii) The following must be included for A-V shunt cannulae (with vessel tips):

(A) The device must comply with Special Controls in paragraphs (b)(1)(i) through (v) of this section with the exception of paragraphs (b)(1)(ii)(B), (b)(1)(ii)(C), (b)(1)(v)(B), and (b)(1)(v)(C), which do not apply.

(B) Labeling must include Warning Statements to address the potential for vascular access steal syndrome, arterial stenosis, arterial thrombosis, and hemorrhage including exsanguination given that the device accesses the arterial circulation.

(C) Clinical performance testing must demonstrate safe and effective use and capture any adverse events observed during clinical use.

(2) Class II (performance standards) for the nonimplanted blood access device.

(3) Class II (performance standards) for accessories for both the implanted and the nonimplanted blood access devices not listed in paragraph (b)(4) of this section.

(4) Class I for the cannula clamp, disconnect forceps, crimp plier, tube plier, crimp ring, and joint ring, accessories for both the implanted and nonimplanted blood access device. The devices subject to this paragraph (b)(4) are exempt from the premarket notification procedures in subpart E of part 807 of this chapter subject to the limitations in § 876.9.

Dated: July 18, 2014.

Leslie Kux,

Assistant Commissioner for Policy.

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